

1631 East 21 Street  
Brooklyn 10, New York  
June 10, 1956

Dear Larry,

I calculate that by this time you ought to be finished with my experiment and thus have time to read this letter.

I didn't attend many of the sessions at Cold Spring Harbor although those that I did attend were very good. Naturally, I was most interested in what Jacob, Wollman, and Hayes (who were all present) had to say and just wrote a two-page letter to Josh on that matter. Hayes apparently had little to contribute to the paper but wanted to be recorded as one who shared the new viewpoint. And that new viewpoint is, of course, unidirectional transfer and prezygotic rupture (! with or without erotic induction) plus some borrowed shavings from McClintock. F is evidently a controlling element which usually sits near TL; ~~it~~ occasionally it jumps behind Gal (or elsewhere). This jump is responsible for mutation of Fplus to Hfr.

Nevertheless they had a lot to say. I thought they had pretty good evidence that all cells in an Hfr culture mate. The argument is thus. For 100 Hfr-Hayes cells, with erotic induction operating, 50 infectious centers and 10 TL S<sup>+</sup> recombinants are produced. Without erotic induction, one gets 20 recombinants. Hence, if lysis of the zygote results every time that lambda is transferred to the zygote, lambda enters the recipient cells half as often as TL. But since lambda enters 50% of the time, then TL enters 100% of the time. Wollman claims cytological corroboration for this conclusion (that's for Bradley), but also claims the same for Fplus cultures. Then Wollman concludes that the Fplus cultures must be transferring some character at Hfr rates. Therefore F is a chromosomal character, the only character transmitted by Fplus cultures at Hfr rates, other characters being transmitted with low frequency.

Then, of course, I think they have conclusively demonstrated that all Fplus crossing is due to Hfr mutants. The fluctuation tests may not be the last word in such matters but they have succeeded in isolating Hfr mutants by indirect selection in three different cultures; it seems to be very repeatable as even Hayes can do it.

By the way, I ran into Appleyard; he asked me what Esther was doing with h lambda. (!) (!) (!) (!) (!)

Give my regards to the Tuesday night club-members. I'll keep you posted on developments at home when I get there.

*Alan*